

## **A Study on Global Quality Value Chains**

### **organized by Japanese Manufacturers**

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#### **Abstract**

Japanese global manufacturers have been challenging to remain competitive in the global marketplace by organizing global value chains for the last three decades. This paper focuses on global manufacturing and quality supply networks, and aims to evaluate the quality oriented operations management in changing environments.

Keywords: Global Value Chain, Japanese manufacturers, Global Operations Management, Total Quality Management(TQM)

#### **1. Introduction**

During the past decades the rapid growth of global value chains (GVCs) has been an important driver of globalization. But the recent world economy is facing a number of structural shifts that may dramatically change the outlook of GVCs in the coming years (Backer and Flaig.2017). The US motorcycle manufacturer Harley-Davidson's recent decision of offshoring proved the importance of global operations strategy in "a new form of Globalization." They said that the decision was "not the company's preference, but represents the only sustainable option."

It reminds us that Japanese automotive manufacturers such as Toyota and Honda decided to set up their manufacturing plants in the US thirty years ago as the only sustainable option. In 2016 their total automobile production in the US has expanded to more than 3.6million unit (total share within the US: 31%). Japanese automotive manufacturers representing Japanese MNCs have been challenging to remain competitive in the global marketplace by organizing global value chains for the last three decades. Most Japanese companies try to exploit the linkage structure and synergy effects among different areas of operations in order to be competitive in the global market (Matsui,2007). Toyota Motor Corporation regarded as the successful example of Japanese Global Operations Management have implemented TQM with the Toyota Way philosophy to improve the quality, productivity and competitiveness (Miyagawa and Yoshida, 2010).

#### **2. Methodology**

To investigate the relationship between TQM practices and business performance in Japanese-owned manufacturers in overseas, we conducted researches in China, the US and the UK through the distribution, collection and analysis of the questionnaire consisting of 118 related questions in nine categories. These categories correspond to the Malcolm Baldrige National Quality Award criteria, which has been used for the evaluation of quality management in many American organizations (Miyagawa and Yoshida, 2005).

### 3. Implications

The survey results of multiple regression analysis show that TQM practices related significantly to business performance (Miyagawa and Yoshida, 2010).

#### 3.1. Findings

Table 1 shows TQM Implementation data obtained from our surveys in China, the US and the UK (Percentage shows the ratio of the positive answer to each question question).

Table 1 TQM Implementation

	Survey in China	Survey in the US	Survey in the UK
Questionnaire / Samples	52	32	18
TQM initiative more than 3 years	90%	91%	94%
TQM strategic plan	81%	81%	83%

Table 2 shows the results of multiple regression analysis between TQM practices and performance using three organizational performances as the dependent variables and TQM practices as independent variables.

Table 2 Research results

	External Performance ( productivity, market share)	Quality Performance ( reducing scrap)	Internal Performance (employee satisfaction)
Survey in the US	TQM strategy Employees participation	CS strategy	HR involvement HR training HR Quality awareness
	External Performance	Quality Performance	Internal Performance
Survey in China	TQM Strategy	Quality information Process control	Employee involvement Customer's satisfaction

#### 3.2. Field research

In addition to the survey data, findings from field research obtained on a visit to Toyota and Denso in the UK in 2015 provide supplementary information. It was revealed that the integrity defined as "the quality of being honest and having strong moral principles" was a core value for Toyota UK and an integral part of the Toyota Way philosophy by which all employees think and act (Miyagawa, 2017).

#### **4. Conclusion**

Our survey concludes that TQM is an effective method to improve organizational performance including employee empowerment, regardless of where the company might be operating. To improve the competitiveness and the productivity Japanese global manufacturers have implemented Global Operations Management, and have established "global quality value chains" of international work-sharing and supply chains with their local supporting industries. This paper is summarized that quality oriented operations management contributes to organizational performance improving quality, productivity and competitiveness in changing environments.

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